On page 9, lines 3-13 should be replaced with

FIGURE 1e shows the photoresist after being developed by a suitable solvent. The more soluble photoresist dissolves, leaving behind only isolated resist ~~structures~~ features 170 and 172 corresponding to the crosslinked ~~portions~~ regions 160 of the ~~polymer~~ photoresist. ~~160~~. Note that, where the exposure was out of focus, as is the case for the resist feature 172 on top of the topography feature 110, the resist feature 172 is ~~considerable~~ considerably wider than the other resist features 170.

FIGURE 1f shows the final result after the pattern is transferred to the layer 120 to be patterned. For this illustration, we use the example of etching the layer 120. Where resist features 170 and 172 are present, the layer 120 is not etched, and only small etched features 180 and 182 remain. Note that the etched feature 182 on top of the topography ~~182~~ corresponding to the larger resist feature 172 is considerably wider than the other etched features 180.

On page 9, lines 20 – 23 and page 10, lines 1 should be replaced with

In FIGURE 2a, we show in cross section, as we did in FIGURE 1, the substrate 200 with topography features 210 and a layer 220 of material to be patterned. In this illustration, this also has an additional coating 225 of an adhesion promotion material. However, as also shown in FIGURE 2a, a new, planar substrate ~~201~~ is prepared. We have called this new substrate a ~~"Carrier" substrate~~ carrier 201. This ~~substrate~~ carrier 201 can be of any size, but is typically of the same general dimensions as the device to be manufactured. It can be made from any material suitable to the final task of molecular transfer. For general applications, quartz substrates of high quality and good surface figure are easily obtained, while certain plastic substrates might also be used for situations requiring deformation prior to adhesion. Other possible carrier materials are silicon wafers, gallium arsenide wafers, various glasses, and various polymeric materials.

On page 10, lines 8-16 should be replaced with

The carrier 201 is coated with several uniform layers: a removal layer 215, a coating of photosensitive ~~coating~~ material 230, and an adhesion layer 235. These facilitate respectively removal from the carrier, photosensitivity and the formation of a latent image, and adhesion to the structures on the final substrate 200. The most important property of the layers is that the ~~transfer~~ removal layer 215 (which may be a distinct material or an interface) can be selectively disassociated from ~~coating~~ photosensitive material 230 containing the latent image and that the photosensitive ~~coating~~ material 230 remains photosensitive when placed in contact with the other layers. This disassociation may occur either inherently, or with subsequent chemical modification, such as dissolution through the introduction of a solvent.

On page 11, lines 1-22 should be replaced with

The removal layer 215 can comprise nothing, if the surface energy of the resist with the carrier is low enough, or be a layer of a low energy material such as teflon, or a dissolvable material, such as another photoresist or any other dissolvable polymer material. The removal layer 215 may also comprise a material that can change phase, for example from a solid to a liquid, by processing such as thermal effects or absorption of directed radiation. For example, such materials may be waxes or metals, respectively. These materials may be deposited on the carrier surface using standard spin-coating or sputtering techniques. In addition, the removal layer 215 may be the same as the photosensitive ~~coating~~ material 230 itself ~~230~~ where the transfer occurs by delamination of the photosensitive ~~coating~~ material 230.

The photosensitive ~~coating~~ material 230 can be selected from a variety of photosensitive materials, such as commercial polymers that undergo chemical or physical changes when exposed to radiant energy. These are often called photoresists. Both negative and positive photoresists can be used, depending on the specific application.

The adhesion layer 235 must have a higher surface energy when placed in contact with the materials on the substrate 200, so common surface preparations such as hexamethyldisilazane (HMDS) can be used. Curable polymers, such as epoxies or other photoresists, can also be used. If this layer is applied prior to photoexposure, the optical properties of the material must also be considered, since UV absorption by the adhesion layer 235 could affect the exposure dose used. Alternatively, the ~~adhesive~~ adhesion layer 235, which can be as simple as a single monolayer of HMDS, may be applied after the exposure step, and UV absorption is less important.

On page 12, lines 1-19 should be replaced with

It should be noted that this adhesion layer 235 may comprise nothing, if the relative adhesion properties of the ~~layer~~ coating 225 and removal layer 215 applied onto the substrate and carrier have suitable adhesion properties. It will also be understood by those skilled in the art that the adhesion layer 235 on the carrier and ~~adhesion layer 245~~ additional coating 225 on the substrate must have suitable adhesion properties to each other to promote the eventual adhesion of the photosensitive layer 230 to the substrate 200 after latent image formation. This may also include subsequent processing steps to improve adhesion after the initial contact is made. Such processing steps can include thermal processing where the diffusion of the material interfaces can occur to improve bonding, or to facilitate a chemical reaction, such as cross-linking.

To create the lithographic pattern, the carrier 201 with photosensitive ~~coating~~ material 230 is exposed to a suitable pattern of radiation 250. This is illustrated in FIGURE 2b. Any one of a variety of commonly practiced lithographic techniques can be used. Exposure can be accomplished by contact lithography with a mask and flood UV exposure. It can also be carried out using standard imaging techniques in a standard stepper or scanner, commonly used for IC microfabrication, as long as the stage has an adapter to properly hold and align the coated carrier. Direct write techniques, such as E-beam lithography or other directed energy exposure techniques, can also be used to expose the photosensitive ~~layer~~ material 230. Many other exposure techniques will be known to those skilled in the art.

On page 13, lines 10-14 should be replaced with

If the carrier adhesion layer 235 and substrate adhesion layer 225 have a suitably larger surface energy relative to the removal layer 215, the layer of photosensitive material 230 containing the exposed regions 260 will detach from the carrier 201 and adhere to the substrate 200. This is illustrated in FIGURE 3b. The carrier 201, now with no coating, is then removed, leaving the ~~photoresist~~ layer of photosensitive material 230 with exposed regions 260 on the substrate 200.

On page 14, lines 6-12 should be replaced with

After transfer has successfully occurred, development of the transferred ~~photoresist~~ layer of photosensitive material 230 and subsequent processing of the substrate would proceed as in a regular photolithographic process, as shown in FIGURE 3c, creating ~~photoresist~~ developed regions 270 which correspond to the exposed regions260.

FIGURE 3d shows the final patterning of layer 220, in which ~~resist~~ developed regions 270 form barriers to an etching process, leaving patterned regions 280 of layer 220 that are the same size regardless of the underlying ~~topography. both with and without topography~~ topographic features 210